## Opening Remarks: Survey of the Nation's Lakes

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## **Session Agenda**

- Review conference objectives and desired outcomes
- Overview of EPA's Monitoring Initiative and rationale for Survey of the Nation's Lakes
- Discuss the key partnership among EPA,
   States, and others to accomplish the Survey
- Current status and design of the Survey



## **Conference Objectives**

- To build a strong partnership among EPA,
   States, and other lake experts to conduct the Survey
- Gather input from conference participants to help select the best indicators, field protocols, and analytical procedures for the Survey
  - Conference discussions will examine both technical and programmatic aspects of the Survey



## Recent Critiques\* of Water Monitoring Programs

- States and Tribes do not have all data needed to make decisions
  - ➤ Set water quality standards
  - Develop watershed plans and TMDLs
  - > Evaluate effectiveness of programs
- Data inadequate for scientifically-valid characterization of water quality condition regionally or across U.S.

\*GAO, National Academy of Science, National Academy of Public Administration, and other recent reports

## Priority Actions to Improve Monitoring

- Strengthen State, Tribal & Interstate monitoring programs
- Collaborate to produce statistically valid assessments of the nation's waters
- Expand accessibility and use of data
- Promote partnerships



# Combination of Tools Serve Water Quality Decisions

Statistically valid survey	<ul> <li>Predict proportion of all waters in good or poor condition, with documented confidence</li> <li>Measure trends in water resource condition and CWA program effectiveness</li> <li>Support development of new WQS</li> <li>Prioritize targeted monitoring</li> </ul>
Modeling and landscape analysis	<ul> <li>Determine where water quality is likely impaired</li> <li>Predict localized water quality</li> <li>Prioritize targeted monitoring</li> </ul>
Targeted monitoring	<ul> <li>Assess WQS attainment for specific segments</li> <li>Measure trends at specific sites</li> <li>Identify sources of pollutants to specific waters</li> <li>Support development of local management measures (TMDL, NPDES permits, NPS BMPs, WQS)</li> <li>Assess performance of individual measures</li> </ul>

# **Budget Initiative for Monitoring: Two Components**

- 1. Enhance State and Tribal monitoring programs by providing new funds to States and Tribes to develop and implement monitoring strategies
  - Enhance access to and use of data
  - Integrate tools to support more efficient use of monitoring resources
- 2. Assess the condition of all of the Nation's waters and changes over time
  - Create partnership among federal/State agencies and others to cost-effectively survey the Nation's waters
  - Provide information, with documented confidence, on the extent of water quality problems and key stressors across the country to support decision making

# Allocation of Monitoring Initiative for the Two Components

## 1. Provide \$9.8M in Sect. 106 grant for improved monitoring programs and State priorities

- Provide each State \$170,000 annually for program enhancements outlined in State monitoring strategies
- Continue to provide Tribal and interstate set-aside

# 2. Provide States and Tribes \$8.45M in Sect. 106 grant to participate in statistically-valid surveys of the Nation's waters

- \$8,000 per site for regional/national scale survey in lower 48
- \$400,000 set aside to build survey capacity in Alaska, Hawaii and trust territories

#### **New Guidelines Issued**

"Guidelines for the Award of Monitoring Initiative Funds Under Sect. 106 Grants to States, Interstate Agencies, and Tribes" were published in the Federal Register on March 29, 2006

- Posted on EPA's Web site at: www.epa.gov/owm/cwfinance/pollutioncontrol.htm
- Copy included in your Conference Notebook in the "Additional Resources" section
- Includes more details regarding Monitoring Initiative and award of the Sect. 106 grants

## Why Surveys are Important

#### Produce reports on the condition of all waters of the U.S.

- Report on core indicators with regional supplements
- Standardized or comparable methods
- Unbiased estimate of condition based on representative subset of waters

#### Provide information on key questions:

- To what extent do waters support healthy ecosystems, recreation, fish consumption?
- What are the most significant water quality problems?
- Is water quality improving?
- Are we spending pollution control dollars wisely?



## Why Surveys are Important

#### Provide data to support CWA programs nationally

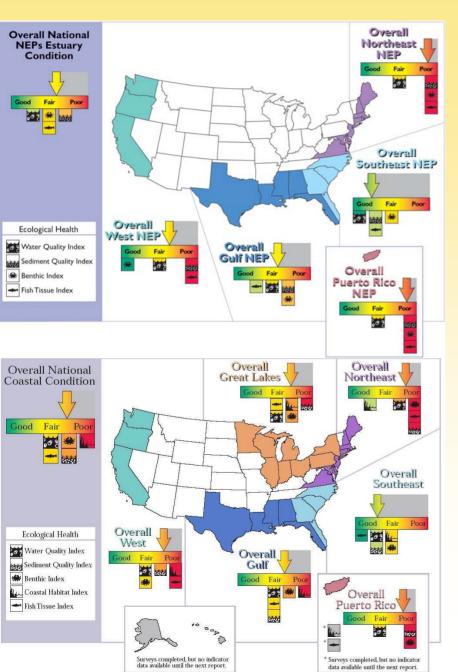
- Develop and enhance Water Quality Standards, e.g., set criteria
- Develop predictive tools, e.g., SPARROW
- Develop diagnostic tools, e.g., CADDIS

#### Support State water quality programs

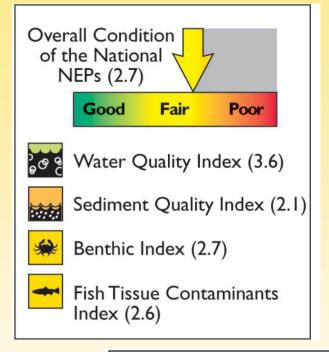
- Use State- or finer-scale surveys to generate cost-effective assessment of 100% of State's waters
- Develop predictive tools at State scale to identify vulnerable/impaired waters



#### Results from Coastal Condition Report



NEPs



All Estuaries



## **Survey Schedule**

	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Lakes	Design	Field	Lab, data	Report	Research	Design	Field
Rivers	Research	Design	Field	Lab, data	Report	Research	Design
Streams	Report	Research	Design	Field	Lab, data	Report	Research
Coastal	Lab, data	Report	Research	Design	Field	Lab, data	Report
Wetlands	Research	Research	Research	Research	Design	Field	Lab, d <sup>-</sup>

## **Goals of Lakes Survey**

#### Report on the condition of the Nation's Lakes

- Statistically valid design so dataset represents the condition of all lakes in regions that share similar ecological characteristics
- Provide <u>regional</u> and <u>national</u> estimates of the condition of lakes, with option for State-scale estimates
- Use consistent sampling and analysis procedures to ensure the results can be compared across the country

Promote collaboration across jurisdictional boundaries in the assessment of water quality

Help build State and Tribal capacity for monitoring and assessment

## Schedule for Lakes Survey

- April 2005 and Nov. 2005: Workshops held to get input on design of Lakes Survey
- Winter 2006: Finalized approach to selecting target lakes for the Lakes Survey; will serve as the basis to allocate Sect. 106 funds
- April 25-28, 2006 State Lakes Meeting: Seek input on what to measure in the Lakes Survey and on other implementation issues

#### Schedule for Lakes Survey (continued)

- Summer/Fall 2006: Develop sampling protocols, lab protocols, and QA/QC plans
- Spring 2007: Training for field crews
- Summer 2007: Sampling conducted
- 2007/2008: Sample processing and data analysis
- 2009: Report on the Condition of the Nation's Lakes completed



## **Design Objectives**

#### Select lakes so that the study will:

- Determine the proportion of lakes (+/-5%) in the conterminous U.S. that exceed a threshold of concern using selected indicators with 95% confidence
- Determine the proportion of lakes (+/-15%) in a specific eco-region grouping that exceed a threshold of concern using selected indicators with 95% confidence

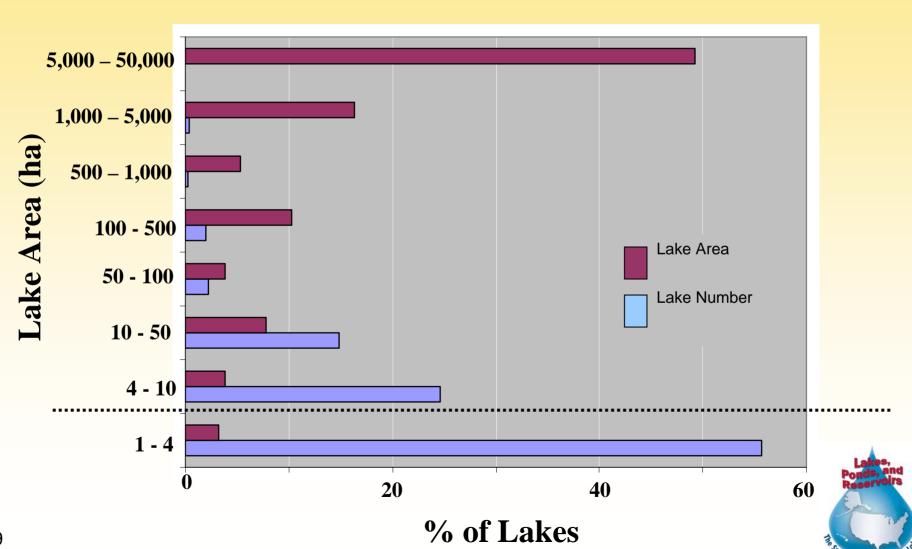


### Framework for Lakes Survey

- 1. Statistically valid probability approach will be used for the Lakes Survey
- 2. Lakes and reservoirs will be included in the Survey
  - For purposes of this Survey, "lakes" refers to natural and manmade freshwater lakes, ponds, and reservoirs greater than 10 acres (4 hectares) in the conterminous U.S., excluding the Great Lakes.
- 3. All samples will be collected in summer of 2007
- 4. Lake size Survey will sample lakes greater than 10 acres



#### Lake Size Classes



### Framework for Lakes Survey

(continued)

- 5. Encourage use of a core set of labs for biological and chemical analyses (vs. 48 different labs)
- 6. Additional random sites generated to support State-scale surveys



## **Draw for the Lakes Survey**

- We have completed the "draw" of the lakes to be included in the Lakes Survey
- 909 individual lakes greater than 10 acres will be sampled
- 91 lakes will be revisited
- Includes113 lakes from the 1972 National Eutrophication Survey (NES)



## **Draw for the Lakes Survey**

- Used nine reporting ecoregions and States within reporting regions to create spatial balance in lakes selected
- 25 lakes appear to be on Tribal Lands
- Lakes found to be "non-target" or that lack access permission will be replaced by a lake within that State
- We need to create list of systems that are on maps but are "non-target" – e.g., fish farms, treatment lagoons, stormwater retention ponds, etc.

#### **Conference Overview**

#### Wednesday, April 26

- Next Session: National Lakes Assessment Planning Projects (NLAPPs) – progress report on projects selected in 2005 (Plenary session)
- Luncheon Address: Robin O'Malley Heinz Center
- After lunch: Discuss what to measure in the Lakes Survey (Breakout Groups A, B, or C; see back of your nametag for designation)
- Late afternoon: Breakout groups report back to Plenary
- Evening Session (7-9 pm): Discuss lessons learned from previous studies and existing databases

### Conference Overview (continued)

#### Thursday, April 27

- 8:15-10:20 am: Discuss feasibility of lake condition indicators (Plenary session)
- 10:45 am-noon: Breakout Groups discuss incorporating regional refinements to the national lakes survey
- 1:30-2:45 pm: Presentation of several assessment methodologies and discussion of their relevance to the Lakes Survey (Plenary session)
- 3:10-5:00 pm: Discuss implementation issues (*Plenary session*)



### Conference Overview (continued)

#### Friday, April 28

- 8:15-10:20 am: Discuss implementation logistics for the national survey, including leveraging partners (Plenary session)
- 10:45-noon: Conference wrap-up and next steps (Plenary session)
- noon:1:30 pm: Closing Luncheon and Address, including approach for creating a random sample of lakes
- 1:30–3:00 pm: Post-Conference Discussion EPA staff will be available to meet with interested conference participants to further discuss the results of the lake selection process

#### For more information, visit:

#### www.epa.gov/owow/lakes/lakessurvey



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EPA Home > Water > Wetlands, Oceans, & Watersheds > Clean Lakes > Survey of the Nation's Lakes

#### Survey of the Nation's Lakes

EPA is working with states, tribes and others to survey the quality of the nation's lakes, ponds and reservoirs.

EPA and its partners will soon be embarking on a Survey of the Nation's lakes. This Survey will be designed to help us to provide regional and national estimates of the condition of lakes. It will use a statistically-valid dataset that represents the condition of all lakes in similar regions sharing similar ecological characteristics. We will ask states and tribes to use consistent sampling and analytical procedures to ensure that the results can be compared across the country. This Survey of the Nation's Lakes will also help build state and tribal capacity for monitoring and assessment and promote collaboration across jurisdictional boundaries in the assessment of water quality.

- Fact Sheet Survey of the Nation's Lakes (PDF, 106 KB, 2 pages, about PDF)
- Information on Section 106 of the CWA
   States will receive funding under section 106 to conduct the Lake Survey

April 25-28, 2006 - National Conference on "Planning a Survey of the Nation's Lakes Holiday Inn Chicago Mart Plaza Chicago, IL

EPA invites states, tribes and others to attend this meeting, which will focus on "Planning a



#### Features

Plan to attend
April 25-28, 2006 National
Conference on
"Planning a
Survey of the
Nation's Lakes in
Chicago, IL